

CORRESPONDENCE



Mobile Computed Tomography at Munich Oktoberfest

TO THE EDITOR: Munich Oktoberfest, the world's largest annual fair, typically has 390,000 guests per day over approximately 17 days and thus poses challenges for local emergency medical services (EMS) owing to the high incidence of injuries and intoxication.^{1,2} To reduce unnecessary EMS transport referrals to hospital emergency departments for mild traumatic brain injury, Munich EMS authorities placed a mobile computed tomographic (CT) scanner on the festival grounds in 2022. Here we describe the results of this experience and compare it descriptively with historical data. A Siemens mobile CT scanner operated by experienced technicians and radiologists was available from 6 p.m. to 2 a.m. Monday through Friday and from 12 p.m. to 2 a.m. Friday through Sunday. An algorithmic approach developed in Germany on the basis of the New Orleans and NEXUS criteria for head and spine CT was implemented by paramedics and emergency physicians on site to guide referral of persons with mild traumatic brain injury for CT.³

A total of 205 patients with presumed or observed mild traumatic brain injury underwent 317 scans; 191 of the cranium, 67 of the midface, and 59 of the cervical spine. Of these patients, 11 had intracranial bleeding, 23 had midface fractures, and none had cervical spine injuries. The mean Glasgow Coma Scale (GCS) score (range, 3 to 15, with lower scores indicating worse neurologic status) was approximately 14 in patients with and patients without intracranial bleeding. After CT evaluation, 17 of the 205 patients were referred to a hospital owing to CT findings; an additional 14 patients were referred for reasons unrelated to traumatic injury (e.g., insufficient "sobering up" or persistently poor GCS scores).

During Munich Oktoberfests from 2015

through 2019, the mean number of patients who were taken to local hospitals by EMS and admitted for surgically treated injuries was 69.1 per day (95% confidence interval [CI], 64.3 to 73.9), as compared with 62.0 per day (95% CI, 52.9 to 71.1) during the period when CT was available at the fair site in 2022. When the data for weekdays and days with the highest attendance (Friday and Saturday) were compared according to period (2015–2019 and 2022), we found fewer mean daily regional trauma–surgical admissions (Table 1) in 2022 for both weekdays and high-attendance days. In contrast, there was little difference between the mean number of hospital admissions in the combined 16 days before and after Oktoberfest and the periods when the festival was ongoing during 2015 through 2019 and 2022 (Table 1). We are aware of other data that show that approximately 18% of trauma–surgical admissions to our emergency departments are for head, neck, or facial trauma,⁴ and we use these data as a surrogate for the types of injuries in patients who would be referred because of abnormal CT scans at our Oktoberfest site.

THIS WEEK'S LETTERS

- 1051** Mobile Computed Tomography at Munich Oktoberfest
- 1052** Bivalent Prefusion F Vaccine in Pregnancy to Prevent RSV Illness in Infants
- 1055** A Dual-Chamber Leadless Pacemaker
- 1057** Clinical Examination of the Cranial Nerves
- 1059** Hydrofluorocarbons, Climate, and Health

Table 1. Trauma–Surgical Hospital Admissions Stratified According to Period.*

	2015–2019		2022	
	No. of Days	Mean Admissions per Day (95% CI)†	No. of Days	Mean Admissions per Day (95% CI)†
Overall	240	69.1 (64.3–73.9)	48	62.0 (52.9–71.1)
During Oktoberfest‡				
Friday and Saturday	30	137.2 (124.6–149.8)	6	117.8 (99.3–136.4)
Sunday–Thursday	50	75.8 (69.4–82.3)	10	62.9 (49.3–76.5)
Before and after Oktoberfest§				
Friday and Saturday	40	90.6 (85.8–95.3)	8	86.6 (77.2–96.0)
Sunday–Thursday	120	42.1 (39.3–44.9)	24	39.5 (33.3–45.7)

* Friday and Saturday were considered high-admission days.

† Confidence intervals have not been adjusted for multiplicity and should not be used for hypothesis testing.

‡ A period of 16 days during the festival was analyzed.

§ A reference period of 16 days before and after the festival was analyzed.

The mobile CT scanner introduced during peak hours at Munich Oktoberfest and the associated enhanced on-scene medical care that ruled out serious injury in a considerable proportion of cases might have reduced the necessity of transportation to the hospital and admission for persons with mild traumatic brain injury and relieved some of the the burden on EMS services and hospitals during this unique large-scale event.

Wilhelm Flatz, M.D.

Ludwig Maximilian University Hospital
Munich, Germany

Dominik Hinzmann, M.D.

Technical University Hospital
Munich, Germany

Viktoria Bogner-Flatz, M.D.

Ludwig Maximilian University Hospital
Munich, Germany
viktoria.bogner@med.uni-muenchen.de

and Others

Drs. Flatz and Hinzmann contributed equally to this letter.

A complete list of authors is available with the full text of this letter at NEJM.org.

Disclosure forms provided by the authors are available with the full text of this letter at NEJM.org.

1. Ghada W, Estrella N, Pfoerringer D, et al. Effects of weather, air pollution and Oktoberfest on ambulance-transported emergency department admissions in Munich, Germany. *Sci Total Environ* 2021;755:143772.
2. Binner C, Selinski S, Barysch MJ, et al. Munich Oktoberfest experience: remarkable impact of sex and age in ethanol intoxication. *Arch Toxicol* 2008;82:933-9.
3. Biberthaler P, Kanz K-G, Leidel BA. Emergency department management of mild traumatic brain injury in adults — an evidence-based algorithmic approach. *MMW Fortschr Med* 2016; 158:53-6.
4. Biberthaler P, Förschner L, Gehring C, et al. Importance of trauma and emergency surgery for German metropolitan emergency departments—an analysis of 524,716 emergency patients. *Unfallchirurg* 2019;122:44-52.

DOI: 10.1056/NEJMc2306490

Bivalent Prefusion F Vaccine in Pregnancy to Prevent RSV Illness in Infants

TO THE EDITOR: Kampmann et al. (Apr. 20 issue)¹ report the results of the Maternal Immunization Study for Safety and Efficacy (MATISSE). Breast-feeding is an important potential modifying factor for respiratory syncytial virus (RSV) infection,² and indeed the trial protocol says that these data will be collected. Can the authors pro-

vide outcomes stratified according to some, all, or no breast-feeding? In addition, a previous trial of a maternal RSV vaccine was halted after a safety signal regarding an increased rate of preterm birth was identified. Can the authors provide a complete distribution of gestational age and birth weight? Finally, the authors found that the vac-